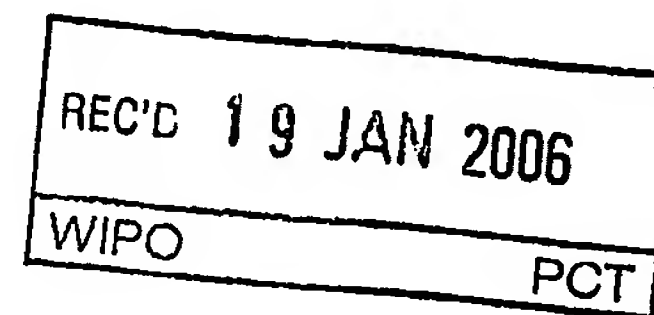


# PATENT COOPERATION TREATY

## PCT

INTERNATIONAL PRELIMINARY  
REPORT ON PATENTABILITY  
(Chapter II of the Patent Cooperation Treaty)  
(PCT Article 36 and Rule 70)



Applicant's or agent's file reference S-9	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/JP2005/001306	International filing date (day/month/year) 25.01.2005	Priority date (day/month/year) 27.01.2004
International Patent Classification (IPC) or national classification and IPC Int.Cl. F25B39/04 (2006.01)		
Applicant SHOWA DENKO K.K.		

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> a total of _____ sheets, as follows:</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>	
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>	

Date of submission of the demand 21.06.2005	Date of completion of this report 11.01.2006	
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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2005/001306

Box No. I Basis of the report

1. With regard to the language, this report is based on:

- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rules 12.3(a) and 23.1(b))
- ☐ publication of the international application (Rule 12.4(a))
- ☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a))

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

- ☒ the international application as originally filed/furnished
- ☐ the description:
- pages \_\_\_\_\_ as originally filed/furnished
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ the claims:
- Nos. \_\_\_\_\_ as originally filed/furnished
- Nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19
- Nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- Nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ the drawings:
- sheets/figs \_\_\_\_\_ as originally filed/furnished
- sheets/figs \* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- sheets/figs \* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2005/001306

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	4, 5, 8-10, 13-17	YES
	Claims	1-3, 6, 7, 11, 12	NO
Inventive step (IS)	Claims		YES
	Claims	1-17	NO
Industrial applicability (IA)	Claims	1-17	YES
	Claims		NO

## 2. Citations and explanations(Rule 70.7)

Document1:JP 10-205920 A(CALSONIC CORPORATION)1998.08.04,  
Paragraph 0012-0024, Fig.1

Document2:JP 2002-372340 A(CALSONIC KANSEI CORPORATION)  
2002.12.26, Paragraph 0025, 0037, 0038, Fig.2

Document3:JP 5-117682 A(IDEMITSU KOSAN CO.LTD.)1993.05.14,  
Paragraph 0008 & US 5295357 A

Document4:JP 7-180930 A(DENSO CORPORATION)1995.07.18,  
Paragraph 0013-0039, Fig.1

The subject matters of claims 1-3 and 11 do not appear to be novel with respect to the Document 1, cited in the ISR.

The subject matters of claims 6, 7 and 12 do not appear to be novel with respect to the Document 4, cited in the ISR.

The subject matter of claims 4 does not appear to involve an inventive step with respect to the Document 1 and the Document 2, cited in the ISR.

The Document 2 discloses a condenser that is 300 mm in height, 700 mm in width as it's seen from the front. It also discloses a refrigerant tube up to 1.8 mm in height and a spacing of 5.5 to 8 mm between each tube.

A skilled person in the art would regard it as a design procedure to change the size of a condenser disclosed in the Document 1 to that of the condenser disclosed in the Document 2.

The subject matter of claim 5 does not appear to involve an inventive step in view of the Document 1 and the Document 3, cited in the ISR.

The Document 3 discloses a refrigerant contains 5 to 50 mass % of a compressor lubricant.

A skilled person in the art would regard it as a design procedure to apply the refrigerant disclosed in the Document 3 to the condenser disclosed in the Document 1.

The subject matter of claim 8 does not appear to involve an inventive step in view of the Document 4.

## Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

V 2. Citations and explanations

The Document 4 discloses a condenser that has 16 refrigerant tubes in total and the number of tubes positioned below the center line of the refrigerant inlet is 7.

So if the number of refrigerant tubes in total is doubled to 32, a skilled person would regard it as a design procedure to double the number of the tubes positioned below the center line of the refrigerant inlet to 14.

The subject matter of claim 9 does not appear to involve an inventive step with respect to the Document 2 and 4.

The subject matter of claim 10 does not appear to involve an inventive step with respect to the Document 3 and 4.

The subject matters of claims 13-16 and 17 do not appear to involve an inventive step with respect to the Document 1, 3 and 4.